

ABSTRACT

METHOD AND APPARATUS FOR CONTROLLING DATA READ/WRITE BETWEEN A HARD DISK AND A HARD DISK CONTROLLER

[0051] A position error signal amplitude indicative of the distance between an expected position of a magnetic head relative to the track centerline of a magnetic data storage and retrieval system and an actual position of the magnetic head relative to the track centerline is detected and filtered. The signal is filtered to generate a sway mode signal amplitude indicative of an oscillation of the actual position of the magnetic head relative to the track centerline in the frequency range of the filter. The absolute value of the sway mode signal amplitude is then determined. If the absolute value of the sway mode signal exceeds a predetermined threshold value that correlates to a high probability of impending a head-disk crash, a warning signal is propagated. Alternative embodiments similarly predict the possibility of head-disk crash on the basis of the maximum value of several samples of the position error signal and on the basis of the maximum value of several samples of the square of the position error signal amplitude.